

IBM system dying of financial anemia at Medical Center

By TIM COBURN

The inter-office memo contained phrases like "had been studied and found to be unsound financially," "the sum of resources is not adequate," and finally "termination of ACME service and recommendation that users move their computing services." Ron Jamtgaard doing his job. Business as usual with everything proceeding in an orderly fashion. Even in death there is a form to follow. In academia the words are important, and the subject is treated objectively.

ACME, the Advanced Computer for Medical Research is dying. That's what the words really mean. The staff already knew and have been hustling new jobs for a month or more. Many of the users had been warned not to make a major investment in the present system. The aroma of terminal illness, not entirely foreign to the hospital, is clearly discernible—only this time it is hitting one of their own.

Computers, or more properly, computer systems don't often die. They are replaced with newer, more expensive, more versatile generations of computers. Each new one is to be the ultimate computer, the computer that will do everybody's job. Once I thought ACME would be like that. Back in 1966 anything seemed possible.

The problem is that ACME can't seem to pay for itself. It has received some three million dollars in direct support from NIH and thousands more from various grants and contracts. Now the support is dwindling and by the end of June will be shut off.

The glass cage, lit up 24 hours a day for the last six years, will be dark. The flashing console lights will no longer blink at me as I wander by the operators desk. The WAITING FOR YOU signal on the terminal, designed in a rare moment of consensus by a tall blond German and a continuously jabbering Frenchman, will lie peacefully in some storage room with loose wires dripping like neurons from their necks.

ACME was born midst all the excitement of the middle 1960's. I remember the first meeting of prospective users. It could have been the first anti-war protest of the medical school community. The large lecture hall was filled with faculty members, technicians, an assortment of students, and of course the salesmen from IBM with their shiny suits and briefcases. Nobody else carries a briefcase around the medical school. It's not part of the form.

Academia likes questionnaires and sure enough there was to be a questionnaire, and a committee to examine all the possible hardware and software systems, and hiring a director, submitting grant proposals, and timesharing, on-line data collection, an interactive system with hundreds of little fingers stretching into every cranny of the medical school. And then there was PL-1, a language anybody could use and understand.

Small computers were out, irrelevant. Walking across the field to throw a deck of cards into the 7090 hopper was inefficient. Stanford would have ACME, and IBM could do it all with their new equipment and extensive experience. The technological millenium had come.

Behind the scenes the birth was not so easy. I only heard the rumors. Lederberg wanted his own system. The comp center, Fisher, Miller et. al. wanted to have one giant system for the whole campus, or at worst to control ACME, and IBM was worried that ACME might commit the heresy of buying a brand-x computer. So they promised the moon.

The computer freaks were skeptical, but they had only a few years of experience under their belts. Their reservations were mere impediments to this magical new system. This was the big time with big money. You go with the proven winners. ACME went with IBM and Ed Feigenbaum. The former was wealthy and the latter had written a book on computer theory. The computation center, SLAC, the hospital administration, and the university business office also went with IBM. Coincidentally, IBM gave Stanford a million dollar grant for communications research involving automated retrieval and storage of information.

The development phase for ACME was a prolonged series of disasters. The first disaster was the "pie file," a magnetic storage device designed to handle millions of bytes of data. Lederberg doubted that there was that much useful information in the whole medical school. Nobody else had such a device. It was the prime reason for getting an IBM system.

Certainly the pie file was one of the mechanical marvels of the decade. I used to sit and watch the strips of tape get "picked" off their hangers, transferred to the reading rollers, and instantaneously speed around the head assembly. The rhythmic clinkety-clank of an automatic bottling machine added to the stark beauty of

this marvelous machine. Little children would stand awed by the scene.

But the IBM service men were less than awed. They were completely frustrated by their daily attempts to keep the device running. Recently, I ran across one of those gentlemen in the mountains back of Santa Cruz. Although bald on top he had very long hair and a beard. He was sitting yoga style facing the ocean, slowly shaking his head back and forth. I was tempted to sneak up beside him and whisper "clinkety-clack" in his ear, but it seemed unkind. He had suffered enough.

The pie file was just the beginning. Core problems, balky interfaces, unworkable or incomprehensible IBM software followed one after another with monotonous regularity. The summer of '68 had 75% down time.

I particularly remember the software problem. The timesharing software system was the second major reason for investing in a business machine in a scientific environment. It wasn't ready when the equipment was delivered of course. Well, that was understandable. Then it was delayed again after six months, and again, and again. Finally, it wasn't going to make the scene at all. So the staff, Gio Wiederhold, Gary Breitbard, Jerry Miller and many others, wrote their own. It wasn't bad. Gio had brought his own version of a timesharing PL-1 system from Berkeley where he had worked with Feigenbaum. Whether its implementation should have been charged to a medical center facility is another question. One of the more serious problems in writing your own system has just recently surfaced, however. PL-ACME is not compatible with other PL-1 systems. The conversion costs are high. But then compatibility seems mostly imaginary between any system.

ACME was not a total failure. Even I, one of its more persistent critics would point to its educational value as a major accomplishment. Both users and staff developed a considerable understanding of the problems in medical computation. They learned what things could be done easily and which problems were expensive. And they began to understand how difficult it is to define rigorously the type of problems that are most interesting. Perhaps this knowledge will be valuable in future systems. Currently the plans for a joint facility between the hospital administrative office and some limited PL-ACME service are in development. I suspect the users will be much more realistic in their expectations and requirements.

Who then will mourn ACME? A noble experiment? A step in the direction of future systems? A compromise between the possible and practicable? I guess I will be sad to see it go. It had a certain childlike appeal to it. It wasn't businesslike. It wasn't cold and impersonal and invariably correct. Its traumas were very down to earth. And certainly it wasn't ACME's fault that it was never allowed to be an Advanced Computer but only a converted accounting machine.

Built and owned by IBM, it will be returned to IBM. Its transistorized heart will be stopped—in spite of Norman Shumway—and its faceless cabinets will be packed up and carted off to some never-never land for technological remnants. Perhaps, I'll actually see it go, without even a whimper. "Here lies ACME, born 1966—died 1973. Economic and political requirements were not compatible with life. There are no survivors."